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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,287	10/27/2003	Reiner Rygiel	21295.65 (H5680US)	2780
29127	7590	12/13/2005	EXAMINER	
HOUSTON ELISEEVA 4 MILITIA DRIVE, SUITE 4 LEXINGTON, MA 02421			PRITCHETT, JOSHUA L	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,287

Applicant(s)

RYGIEL, REINER

Examiner

Joshua L. Pritchett

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This action is in response to Amendment after non-final rejection filed October 25, 2005.
All applicant's arguments have been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5 and 7-13 rejected under 35 U.S.C. 103(a) as being unpatentable over Bewersdorf (US 2002/0105722) in view of Eastman (US 6,411,434).

Regarding claim 1, Bewersdorf teaches a confocal microscope with a sample carrier (Fig. 4) comprising a first coverslip (22) and a second coverslip (22) wherein the second coverslip carries a mirror (25) and the mirror surrounds the sample region (para. 0055; Fig. 4). Bewersdorf lacks reference to a cavity or a frame. Eastman teaches the use of a frame (12 and 14) to hold a first (26) and second (16) coverslip with a cavity between them (Fig. 6). Eastman further teaches a medium filled in the cavity (col. 7 lines 32-37). Although Eastman is silent as to the medium having approximately the same refractive index of the first and second coverslips,

the refractive index of the Eastman medium must approximately match the refractive indices of the first and second coverslips because a significant difference between the refractive indices would cause reflection of light at the interface of the medium and the coverslip. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Bewersdorf invention include the cavity and frame of the Eastman invention for the purpose of holding the sample in place while protecting the sample from being damaged.

Regarding claim 2, Bewersdorf teaches the substrate of the coverslips being anisotropic or isotropic materials that are transparent to the wavelengths used (Fig. 4). The coverslips must inherently be either anisotropic or isotropic.

Regarding claim 4, Bewersdorf teaches the invention as claimed but lacks reference to the distance between the coverslips. The Eastman reference teaches the use of a sample as thin as possible (col. 2 lines 25-35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Bewersdorf cavity be less than 50 microns as suggested by the Eastman reference for the purpose of transillumination of the specimen for without significant loss of incident light.

Regarding claim 5, Bewersdorf teaches the mirror on the second coverslip reflective for light in a wavelength range of 300-1300 nm (para. 0021).

Regarding claim 7, Bewersdorf teaches the mirror is made of a dielectric coating (para. 0019).

Regarding claims 8 and 10, Bewersdorf teaches the invention as claimed but lacks reference to a circular sample region. Eastman teaches the use of a circular sample region (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was

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made to have the Bewersdorf invention include the circular sample region of Eastman for the purpose of allowing ample light to pass through the viewing area to achieve a high contrast image of the sample.

Regarding claim 9, Bewersdorf teaches the invention as claimed but lacks reference to an adhesive. Eastman teaches the use of an adhesive to secure portions of the coverslip together (col. 6 lines 40-50). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Bewersdorf invention include the adhesive of Eastman for the purpose of permanently securing the coverslips to the frame.

Regarding claims 11 and 12, Bewersdorf teaches the coverslips are in the shape of a square (Fig. 4), which is a polygon with identical side lengths and a rectangle.

Regarding claim 13, Bewersdorf teaches the microscope is an interferometric fluorescence microscope (abstract).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bewersdorf (US 2002/0105722) in view of Eastman (US 6,411,434) as applied to claim 1 above, and further in view of Lakowicz (US 2002/0160400).

Bewersdorf in combination with Eastman teaches the invention as claimed but lacks reference to the use of quartz and glycerol. Lakowicz teaches the use of quartz as a means to create the coverslips (Fig. 1A). Lakowicz teaches the use of glycerol as a means to fill the cavity of a microscope slide (para. 0092). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Bewersdorf invention include the quartz

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coverslips and glycerol of Lakowicz for the purpose of efficiently transmitting light through the coverslips and protecting the sample.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bewersdorf (US 2002/0105722) in view of Eastman (US 6,411,434) as applied to claim 1 above, and further in view of Aagard (US 3,720,924).

Bewersdorf in combination with Eastman teaches the invention as claimed including the use of a metal mirror (para. 0019) but lacks reference to the use of aluminum in the mirror. Aagard teaches the use of aluminum to create a mirror in a microscope (col. 9 lines 60-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Bewersdorf mirror made of aluminum as taught by Aagard for the purpose of reflecting light in the visible wavelength range.

Response to Arguments

Applicant's arguments, see Amendment, filed October 25, 2005, with respect to the rejection(s) of claim(s) 3 under Binnings have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lakowicz. Applicant argued that Eastman and Binnings failed to teach quartz coverslips and glycerol in the cavity. Lakowicz teaches the claimed combination.

Applicant's arguments, see Amendment, filed October 25, 2005, with respect to the drawings have been fully considered and are persuasive. The objection of the drawings has been withdrawn. Applicant amended the drawings to overcome the objection.

Applicant's arguments filed October 25, 2005 have been fully considered but they are not persuasive.

Applicant argues that Bewersdorf neither discloses nor suggest a mirror that surrounds the sample region. As shown in Fig. 4 of Bewersdorf the cavity between the two coverslips includes the sample (23) and a metal reflective mirror (25). For light to pass through the sample as required by the Bewersdorf reference there must be some opening in the metal reflective layer. Otherwise all the light incident the metal reflective layer would be reflected and no light would reach the sample. The region of the sample that is within the opening of the metal reflective layer is the sample region and the metal reflective layer would surround that sample region.

Applicant argues that the motivation to have the refractive indices of Eastman approximately match is not explicitly taught. Motivation may come from either the references cited or knowledge of one of ordinary skill in the art. The rejection has not been changed but the examiner will provide additional evidence to show that interfaces of substantially different refractive index materials cause light reflection. Pietera (US 3,786,184) teaches a microscope slide and states that substantially different refractive index materials cause reflection at the interface (col. 7 lines 10-20).

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Applicant argues that claim 6 is allowable because it depends from claim 1. As stated previously the rejection of claim 1 is proper therefore this argument is moot.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP 


DREW A. DUNN
SUPERVISORY PATENT EXAMINER